WHAT IS CLAIMED IS:

1. Apparatus for selectively receiving a radio frequency (RF) signal, comprising:

an array of antenna elements for receiving the RF signal;

a navigational controller for determining a pointing vector from coordinate information; and

beam-forming electronics connected to the array of antenna elements and the navigational controller for forming reception lobes.

2. The apparatus of claim 1, wherein the elements of the array comprise dual-frequency patch elements.

3. The apparatus of claim 1, wherein the beam-forming electronics form the reception lobes by adjusting the phase of the elements of the array.

4. The apparatus of claim 1, further comprising an antenna output from the beam-forming electronics.

5. The apparatus of claim 1, wherein the elements of the array are arranged in a symmetric configuration.

6. The apparatus of claim 5, wherein the elements of the array are arranged in a radially symmetric configuration.

7. The apparatus of claim 1, wherein the RF signals comprise signals from at least one global positioning system (GPS) satellite and the pointing vector comprises a satellite pointing vector.

8. The apparatus of claim 1, wherein the reception lobes have a width of 25 degrees or less.

9. The apparatus of claim 1, wherein said beam-forming electronics comprises:

at least one phase shifter connected to the array of antenna elements for shifting the phase of the received RF signal; and

a beam-forming algorithm processor connected to the at least one phase shifter and the navigational controller for calculating an amount by which the at least one phase shifter shifts the received RF signals in response to the pointing vector.

10. The apparatus of claim 9, wherein the at least one phase shifter comprises an array of phase shifters.

11. The apparatus of claim 10, wherein said beam-forming electronics comprises a means for summing outputs of each phase shifter of the array of phase shifters.

12. The apparatus claim 11, further comprising an antenna output from said means for summing outputs of each phase shifter, of the beam-forming electronics.

13. The apparatus of claim 9, wherein the output of the phase shifters constructively amplifies selectively received RF signals by an amplification factor by aligning selective reception lobes of each element of the array of antenna elements, while interference signals from undesired sources are combined by the

phase shifters in a random manner, such that the interference signals experience essentially no amplification.

14. The apparatus of claim 13, wherein the constructive amplification amplifies desired, selectively received RF signals by at least 12 dB.

15. The apparatus of claim 13, wherein the interference signals have a strength of -30 dB.

16. The apparatus of claim 1, wherein the navigational controller comprises:

a receiver for receiving RF signal transmissions conveying absolute position information of the apparatus;

an inertial measurement unit (IMU) for measuring changes in relative position of the apparatus; and

a navigation processor connected to the receiver, the IMU, and the beam-forming algorithm processor for receiving absolute and relative position information from the receiver and the IMU, and calculating the pointing vector from the absolute and relative position information, and transmitting the pointing vector to the beam-forming algorithm processor.

17. The apparatus of claim 16, wherein the receiver comprises a GPS receiver.

18. The apparatus of claim 17, wherein the GPS receiver contains satellite almanac information comprising location information of satellites.

19. The apparatus of claim 16, wherein the IMU comprises a vibrational sensor.

20. The apparatus of claim 16, wherein the IMU comprises a gyroscopic sensor.

21. The apparatus of claim 20, wherein the gyroscopic sensor comprises a laser gyroscopic sensor.

22. The apparatus of claim 16, wherein the IMU comprises an accelerometer.

23. The apparatus of claim 16, wherein the IMU is a micro-machined device.

24. The apparatus of claim 16, wherein the relative position information comprises a change in velocity.

25. The apparatus of claim 16, wherein the relative position information comprises a change in angle.

26. The apparatus of claim 16, wherein the navigation processor is connected to a host.

27. The apparatus of claim 26, wherein the connection with the host provides input and output (I/O) communications between the navigation processor and the host.

28. The apparatus of claim 16, wherein the satellite pointing vector is updated using a pre-determined refresh rate.

29. The apparatus of claim 28, wherein refresh rate is 200 Hz.

30. The apparatus of claim 28, wherein the refresh rate corresponds to an update rate of the reception lobes.

31. A method for selectively receiving a radio frequency (RF) signal, comprising the steps of:

receiving an RF signal using an array of antenna elements;

determining a pointing vector from coordinate information; and

forming reception lobes of the antenna array to detect RF signal sources in the direction of the pointing vector.

32. The method of claim 31, wherein the step of determining a pointing vector determines a satellite pointing vector.

33. The method of claim 31, wherein the step of determining is accomplished using actual coordinate information.

34. The method of claim 31, wherein the step of determining is accomplished using relative coordinate information.

35. The method of claim 31, wherein the step of forming the reception lobes is accomplished by shifting the phase of an RF signal received in the step of receiving.

36. The method of claim 31, further comprising the steps of:

shifting the phase of signals from antenna elements in the array to obtain phase-shifted signals; and

summing the phase-shifted signals obtained in the step of shifting in a manner such that desired RF signals in the direction of the pointing vector are constructively summed, providing an effective amplification of the desired RF signals, while interference RF signals not in the direction of the pointing vector are not effectively amplified due to random shifting of the interference RF signals.